TACOM

Open Systems Project Engineering Conference (OSPEC) FY98 Status Review

TARDEC

By

William Pritchett

Weapon Systems Technical Architecture Working Group (WSTAWG)

Email: wpritche@dcscorp.com

(703) 683-8430 x726

Fax (703) 836-6509

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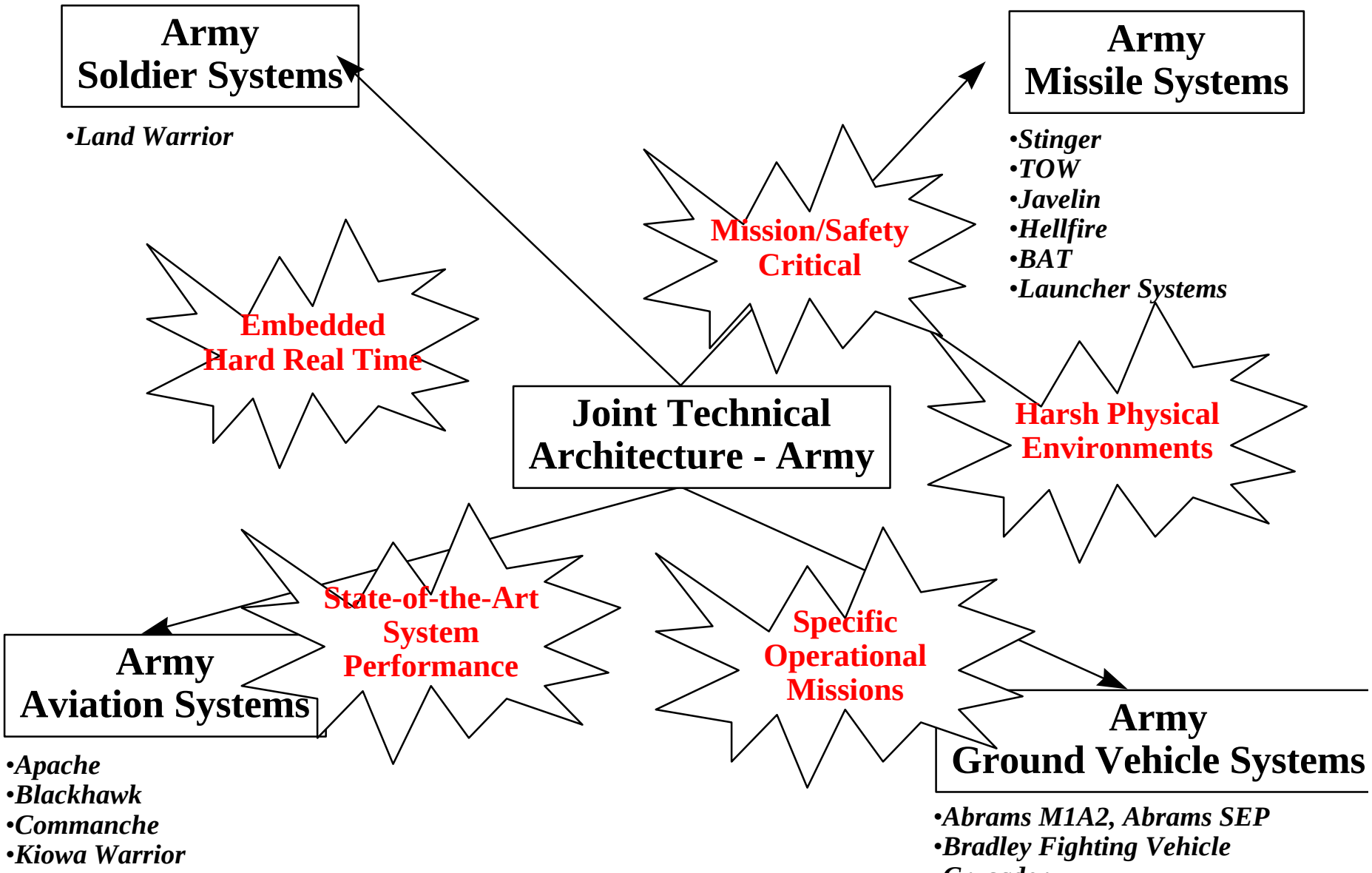
Agenda

- WSTAWG Overview
- WSTAWG HOC/Framework
- WSTAWG Operating Environment (OE)
- WSTAWG OS Services/POSIX
- WSTAWG POSIX Participation/Focus
- Participation/Deliverables

WSTAWG Overview



WSTAWG Overview (Cont.)

Mission:

- Define weapon system domain exceptions/extensions consistent with TA objectives.

Key TA Objectives and Requirements:

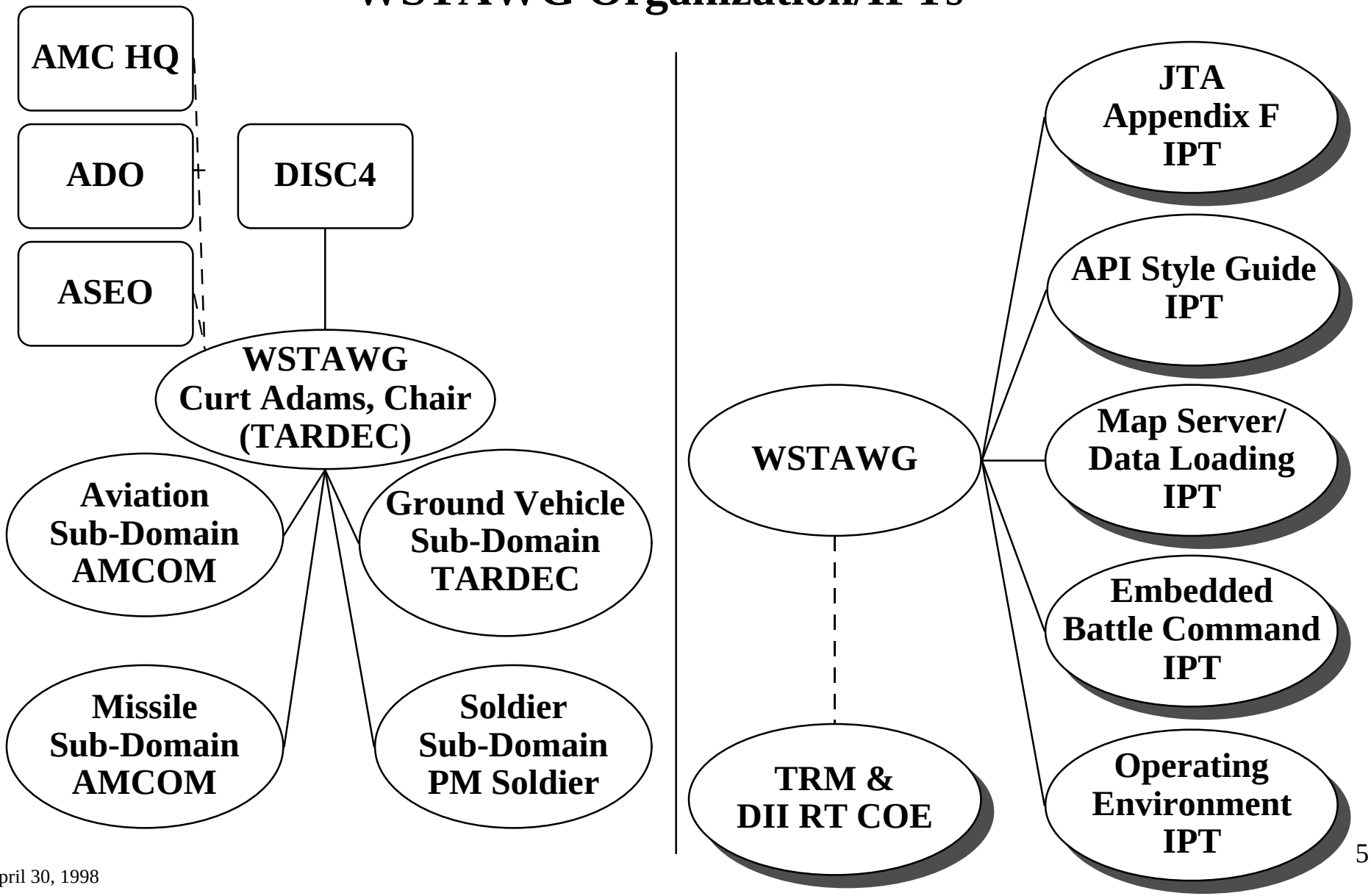
- Define minimum set of interface standards to achieve interoperability.
- Maximize the use of commercial standards.
- Promote software reuse for affordability and reduced interoperability risk with emphasis on utilizing the DII COE concept.
- Promote open systems for affordability and supportability.

Derived Requirements:

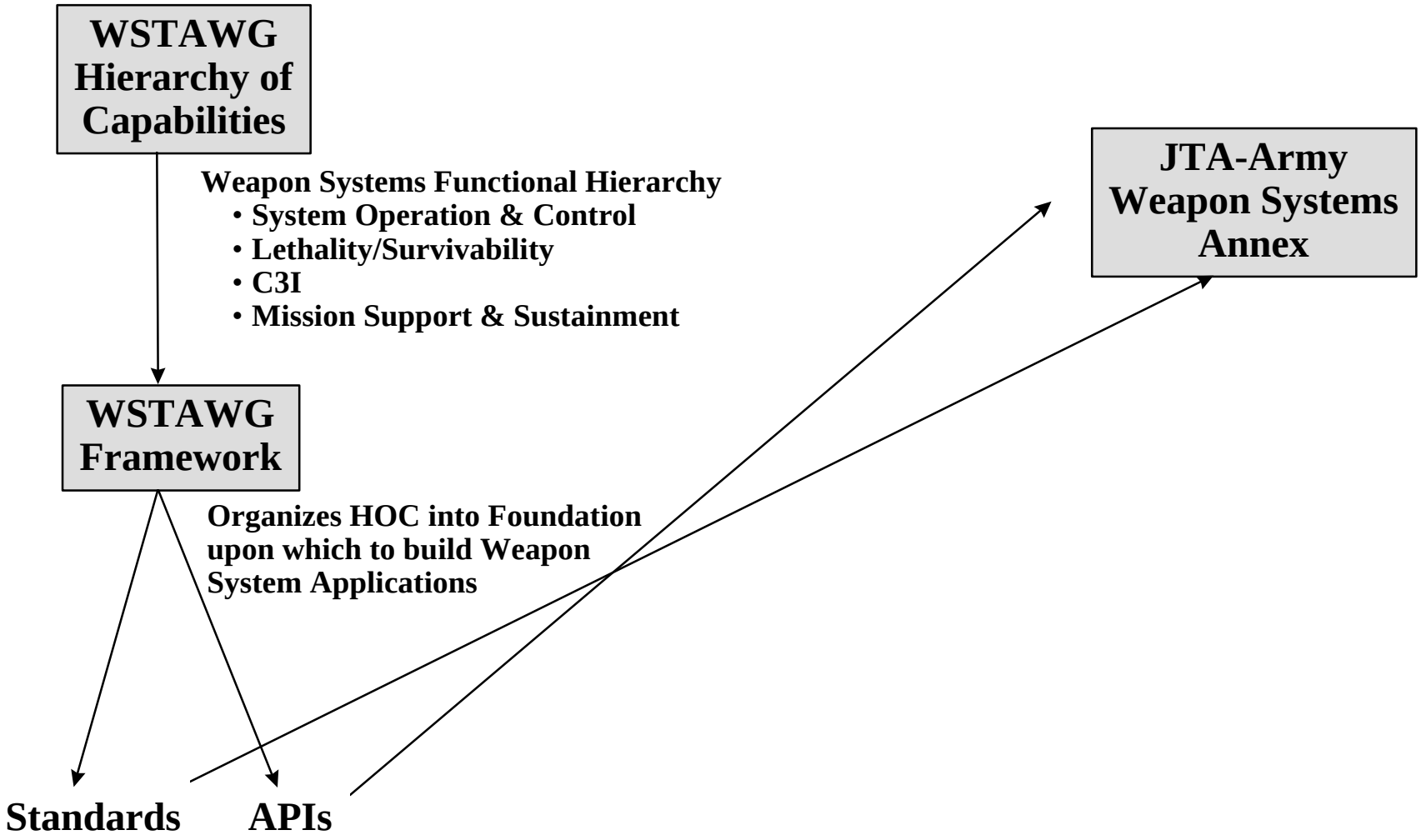
- Provide technical framework to enable heterogeneous developments to efficiently use common components and achieve interoperability.
- Characterize weapon system domain computing environment/driving requirements.
- Be compatible with, but don’t dictate specific weapon system architecture.
- Focus on application software/interfaces, not products/implementations.

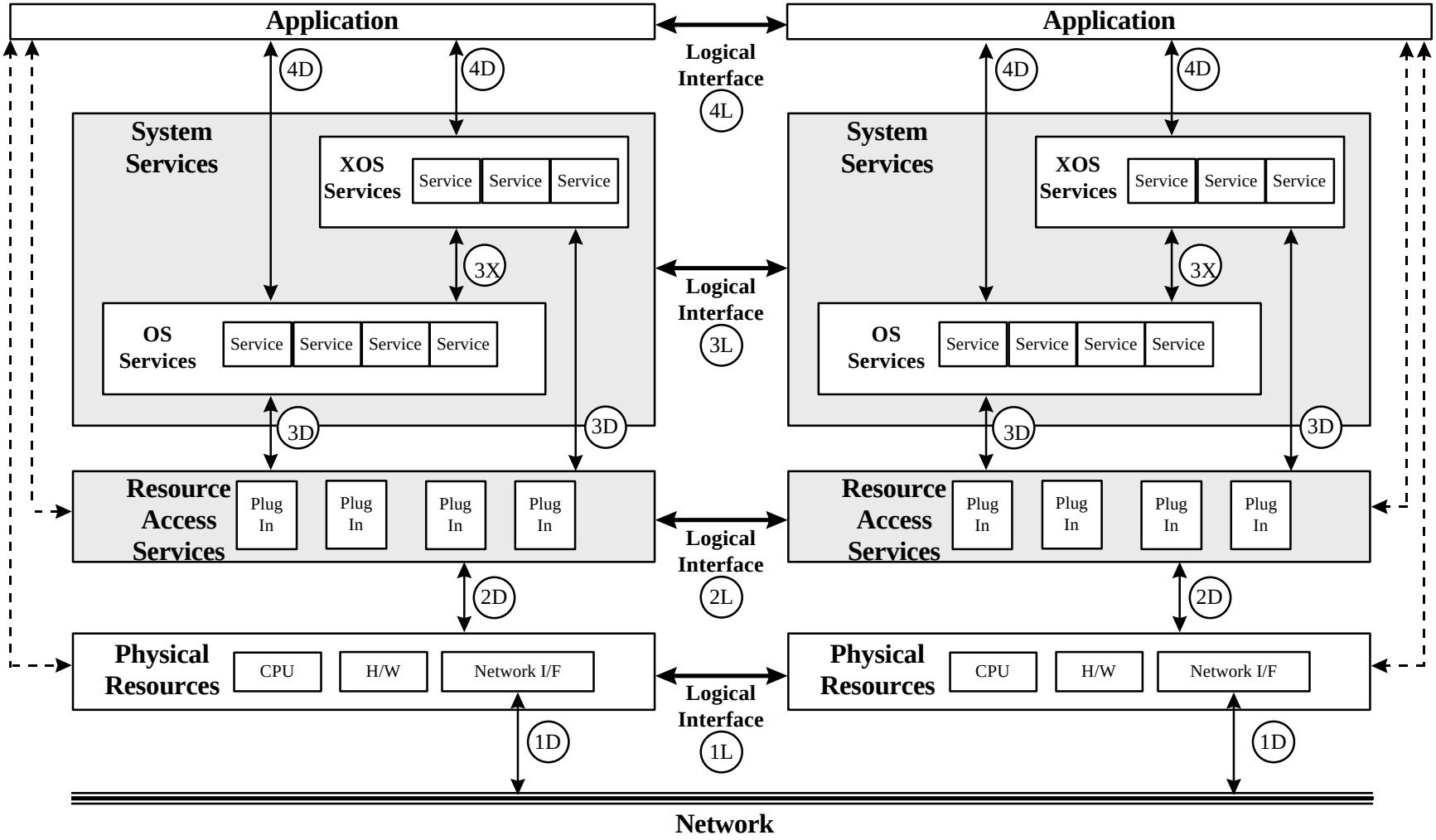
WSTAWG Overview (Cont.)

WSTAWG Organization/IPTs



WSTAWG HOC/Framework





4 = Application layer
3 = System services layer
2 = Resource access service area
1 = Physical resource layer

L = Logical peer interface
D = Direct services interface
X = OS to XOS service connection

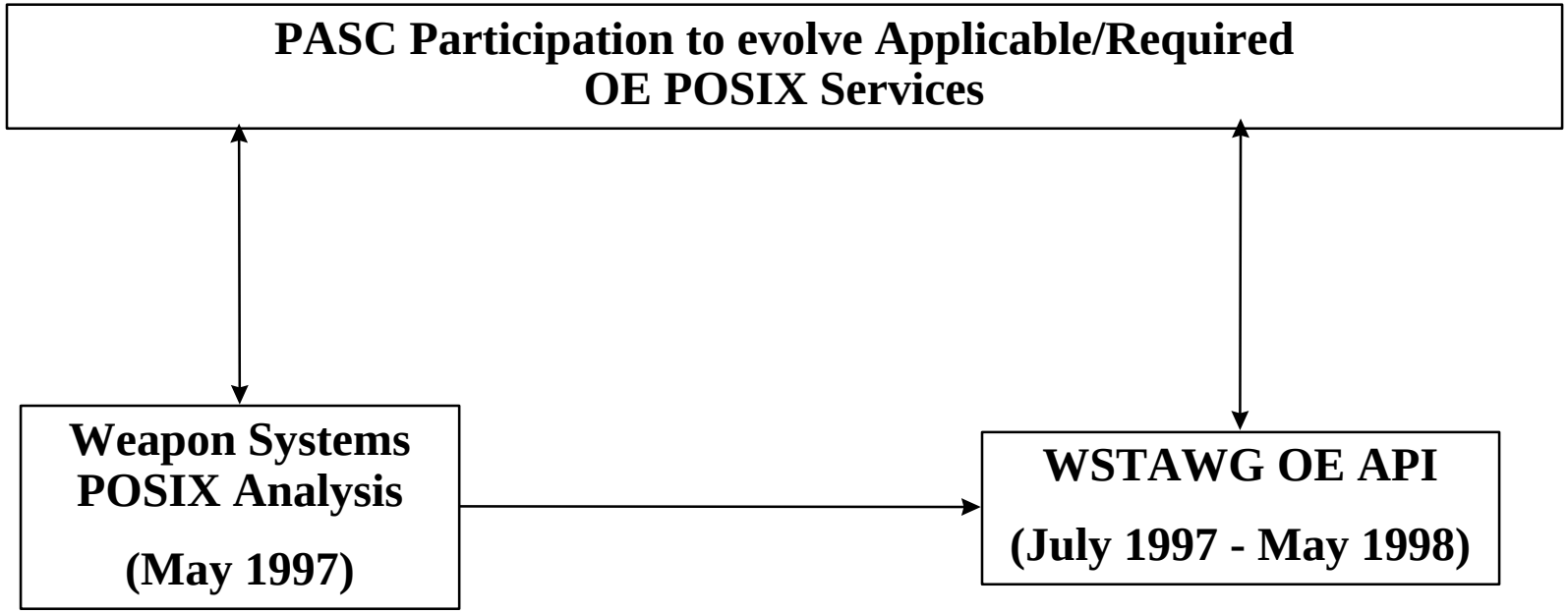
Connections not supported by GOA

Encompasses Operating Environment

OE Goals

- Support the development of portable, reusable, rehostable applications.
- Support the development of real time embedded applications in a heterogeneous distributed real time environment.
- Provide semantic/behavioral correctness on multiple OS and hardware platforms with predictable performance.
- Provide extensibility and scaleability to suit varying platform requirements.
- Support distributed applications integration environments. Specifically, communication and synchronization mechanisms developed to support the relocation of OE applications among processors and LRUs within a system without requiring the modification of application software.
- Support the development and interoperability of applications in multiple programming languages (Ada 83, Ada 95, C) utilizing distinct OE vendor implementations.

Evolution of the OE Operating System Services Interface



- ***Weapon Systems OS Requirements***
- ***Issues and Concerns***
- ***Recommendations***
- ***Preliminary POSIX Profile***

Initial Set of WSTAWG POSIX Concerns

- Lack of availability of conformance tests.
- Lack of vendor support (for required real time).
- Number of options within the real-time extensions.
- Viability of emerging POSIX standards.
- Safety certification.
- Lack of Ada bindings.
- Ambiguity in the POSIX specifications.
- Decline in PASC participation.

WSTAWG PASC participation is aimed at eliminating these concerns and Developing required OE POSIX functionality.

WSTAWG POSIX Participation/Focus

- POSIX Distributed Systems Communications (1003.21)
  - Developing Ada 95 language binding to the LIS.
- POSIX SRASS (1003.1h)
  - Providing support to develop and document the standard.
- POSIX SSWG Real Time (1003.1d, 1j, 1q)
  - Monitoring to ensure compliance with OE POSIX profile.
- POSIX Profiles (1003.13)
  - Supporting the incorporation of WSTAWG profile.
  - Participating with SAE to develop new real time profile.
- POSIX Ada Language Bindings (1003.5c)
  - Participating to ensure availability of bindings to WSTAWG profile.
- POSIX Test Methods (2003)
  - Participating to ensure availability of conformance tests for WSTAWG profile.

- FY97 Participation/Deliverables
  - Supported development/progression of SRASS and Dist Comm.
  - Monitored and supported Real-time and SAE OS API projects.
  - Developed Weapon systems POSIX analysis final report.
  - Developed 1003.21 preliminary Ada language binding.
  - Developed Weapon systems preliminary POSIX profile.

- FY98 Participation/Deliverables
  - Supporting development/progression of SRASS, Dist Comm, and Profiles.
  - Monitoring and supporting Bindings, Conformance, and Real-time projects.
  - Developing 1003.21 Ada language binding.
  - Developing final weapon systems profile, incorporated with SAE OS profile.

- http://www.oeipt.dcscorp.com